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Work Importance and its Measurement:
Review of the Literature

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Review of the Literature

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This report reviews the literature on work importance and constitutes an important prelude to a study that is being conducted to determine the importance of work in the life patterns and life plans of career and non-career personnel in the United States Navy. Important dimensions of work and of the work milieu are examined for the relative importance and degree of impact of these dimensions on overall work importance.

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FOREWORD

This report reviews the literature on work importance and constitutes an important prelude to a study that is being conducted to determine the importance of work in the life patterns and life plans of career and non-career personnel in the United States Navy. This literature review was funded through the Officer of the Assistant Secretary of Defense (FM&P).

The research reported herein is expected to benefit Navy recruiting as well as the research community.

JOHN J. PASS
Director, Personnel Systems Department

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SUMMARY

This report reviews the literature on work importance and constitutes an important prelude to a study that is being conducted to determine the importance of work in the life patterns and life plans of career and non-career personnel in the United States Navy. Important dimensions of work and of the work milieu are examined for the relative importance and degree of impact of these dimensions on overall work importance.

— Specifically, this review covers the literature surrounding the importance of work and its various aspects in relation to life goals, satisfaction, and job tenure. The focus is on statistical studies, which have identified important dimensions of work, using empirical data.

It is believed that knowledge of the relative importance of work and of the various aspects of work that are deemed important will materially aid in developing career guidance materials as well as aiding in enlistment advertising and incentive programs.

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Problem

A study is currently being conducted to determine the importance of work in the life patterns and life plans of career and non-career personnel in the United States Navy. Important dimensions of work and of the work milieu are being examined for the relative importance and degree of impact of these dimensions on overall work importance.

Objective

The objective of this report is to review the literature on work importance as a significant prelude to the above mentioned study. Specifically, this review covers the literature surrounding the importance of work and its various aspects in relation to life goals, satisfaction, and job tenure. The focus is on statistical studies, which have identified important dimensions of work, using empirical data. It is believed that knowledge of the relative importance of work and of the various aspects of work that are deemed important will materially aid in developing career guidance materials as well as aiding in enlistment advertising and incentive programs.

Background

The importance of work, job satisfaction and its determinants, and work motivation have been researched, and the research has been reviewed so often that one might ask: "Why another review of studies?" The answer is obvious: times, situations, and people change, so that information and conclusions need updating and enriching.

Many of the recent studies have been theoretically based, empirically sound, and productive of insights. Many of the recent reviews have been thorough and have contributed to the clarification of important issues. They have, in fact, been numerous and thorough enough so that this review is primarily a review of recent reviews, a summary of the conclusions of reviews, rather than a traditional review of research. There is, however, one innovative note in this review, as there is an original study the report of which follows: most such research has focused on work alone, or on the "centrality of work," without examining the other aspects of life, the other roles and contexts, to which work is "central" or indeed in many cases peripheral.

It may help to give here one example of "centrality" and one of "peripherality" (it is perhaps significant the latter term is not found in some leading desk dictionaries). The centrality of work and the values sought in it is the subject of a recent major study of the Meaning of Work (MOW, 1987), a cross-national investigation of such scope that it is authored by a committee virtually without a name. In it, work is the focus and its centrality is a major issue, but there is no operational definition, no detailing of that to which work is considered central. However, in an early study that has been lost sight of in the concern with work (Super, 1940, 1941), the importance of work was compared with the importance of avocational activities and of married life as sources of satisfaction: the periphery was defined and studied.

In recent sociological writings in Australia the term "the shirk ethic" has come to use as a parallel to the "work ethic:" Work, it appears, is important in that culture not for its own sake, but for the sake of an important element in the periphery, leisure. In that culture one works hard in order to play hard: It is play that is cental psychologically when one has work, even though work may be central temporally.

A Taxonomy of Life Roles

It is now commonplace among industrial and organizational (I/O) psychologists ("work psychologists" in European terminology) that their own taxonomy is confused by the use of many terms to denote one and the same construct and by the use of any one term to denote several differing constructs. Attempts to standardize have not been made, for each writer has used, and perhaps defined, his or her own terms without much consideration of the usage of more than one or two others. The few attempts to standardize terminology have failed to provide a standard (Blau, 1985; Huszczo, 1981; Morrow, 1983; Muchinsky, 1983; Super, 1976). The present attempt may therefore also fail to set standards, but it can at least make clear the meanings used here.

Given the concept of the centrality of work, of its importance relative to that of other life roles, the terms "work," "employment," "leisure," and "play" are of special concern here. In recent years it has been recognized that the terms and constructs "home and family," "community," and "study" need to be added to this set. With the long-standing focus on work, adequate attention has been paid to terms such as "task, position, job, and occupation;" but "vocation and avocation" have not been considered by I/O psychologists, and the term "career" (now displacing "vocation" among vocational psychologists and career counselors and educators), has with rare exceptions been treated merely as a more socially acceptable synonym for occupation.

Shartle (1952) first introduced order into the terminology of occupations by defining "position, job, and occupation." Super (1957) refined the concept of "career" and then attempted (Super, 1976) to define and standardize this and related terms. When the Work Importance Study (WIS) (Nevill & Super, 1986a; Nevill & Super, 1986b; Super, 1982) got underway, Kidd and Knasel (1980) reviewed relevant English-language publications on the subject and, in work leading up to the development of the WIS Salience Inventory (Nevill & Super, 1987; Super & Nevill, 1985) developed a model of role importance (Knasel, Super & Kidd, 1981; Super 1982). This model drew on reviews of their national literatures by the directors of projects in other participating countries. The taxonomy that follows is based on this accumulated work.

The Life Role Domain Behaviorally Defined

Seven major life-career roles were first identified in the Life Career Rainbow (Super, 1980). These include child, pupil/student, leisurite, worker, citizen, spouse, homemaker, and parent. In the WIS (Super, 1982) these were reduced to five to facilitate research and development work and especially the collection of data from large numbers of adolescent and adult subjects: student, worker, homemaker, leisurite, and citizen. An international team of psychologists from the United States, the United Kingdom, Canada, Australia, France, Switzerland, West Germany, Spain, Portugal, Italy, Poland, Yugoslavia, and Israel (some of whom dropped out later, to be replaced by others from the same or other European, Asian, and African countries), agreed upon the following definitions. They used the activity rather than the personal noun as those proved to be more readily understood by respondents to questionnaires and inventories:

Studying: taking courses, going to school (day or night classes, lectures, or laboratory work); preparing for class, studying in a library or at home, in addition to formal or informal independent studying.

Working: working for pay or for profit, on a job or for oneself; continuous employment: an activity that produces something of value to other people; a means of

earning a livelihood and having a social role effort expended for survival or for other outcomes such as having a social role or for self-fulfillment.

Community Service: participating in community activities such as recreational groups, service organizations, neighborhood associations, political parties, trade unions, and civic groups.

Home and Family: taking care of one's own room, apartment, or house: fixing meals or cleaning up afterwards, shopping, caring for dependents such as children and aging parents, working in one's garden, and doing household repairs.

Leisure Activities: taking part in sports; watching games or television: pursuing hobbies; going to museums, theater, or concerts; reading, relaxing, or loafing: just being with one's family or friends.

Although the above list appeared to serve well in a number of studies and in a number of diverse countries after minor cultural adaptations of the behavioral definitions, the life-role domain is not the only one that has been considered and that must be included in a taxonomy. There are also the institutional and the content domains identified also by the MOW (1987), and the psychological aspects of roles, need consideration as well as the social roles.

The Institutional Domain

Just as the role domain is behavioral, so the institutional domain is structural. The domain of concern to I/O psychologist is two-fold: organizational and industrial. Social psychologists are concerned also with the family, the school, the community, and with leisure, although leisure rarely figures in their writings. These settings or theaters in which behavior takes place obviously overlap with the roles, the behaviors that take place in them, but they are not identical. For example, family behavior may take place in the workplace when a domestic emergency arises, and work may be taken from an office to be done at home at night or over the weekend. Definitions follow:

Organization: In I/O psychology this generally denotes an employing organization, an agency or company or other entity which employs people to produce or distribute goods or services. In other aspects of social psychology, as noted above, there are other organizations such as the home and family which produce goods and services for themselves but not for general distribution. (It is noteworthy that increased awareness of working women in psychology, in education, and in business and industry has led to I/O psychology's greater attention to these other types of organizations.)

Industry: A term with many meanings, that which is relevant here being a type of producing, distributing, or service enterprise or organization (e.g., the paper, coal-mining, advertising, or health industries). In a broader sense, the school, the community agencies and organizations, the home and family, and leisure institutions come under this heading as theater of activity, the stages on which the roles are most often played.

The Content Domain

There remains to be defined another set of terms and constructs, namely the content of work or other activity from a perspective which is more microscopic than that used in the life-role domain. As I/O psychologists have shown (e.g., Shartle, 1952). work activities are made up of tasks, are organized into positions, jobs, and occupations: from

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another perspective they are organized into vocations, from another still (according to a few theorists, researchers, and practitioners) into careers, and gain into avocations. These have been defined as follows (Shartle, 1952; and more comprehensively, Super, 1976):

Task: This is, unless one gets down to the atomistic level of motion study, the smallest unit of behavior to which I/O psychologists and engineers have found it desirable to pay attention. The Wiley Encyclopedia of Psychology (Corsini, 1984) does not define the term except with reference to its use in experimental psychology during the 19th century: it is a behavioral unit, small or large, that a person has to perform on instructions from either others or from oneself. According to the Wiley authority on task analysis, "task analysis starts with the development of a task inventory, an exhaustive list of all the tasks performed by incumbents in one job" (p. 401). The Oxford Dictionary (Sykes, 1976) defines a task in a way compatible with that of the Wiley Encyclopedia: "a piece of work imposed; lesson to be learned at school: piece of work voluntarily undertaken." Important in industrial and clerical job analysis, task analysis is also used in home economics.

Position: This is the location of a person or set of persons in a network of social relationships; or, behaviorally, a set of tasks performed by one person. Thus a child occupies a position in the family network, a pupil in the educational network, and an employee or owner-manager in a business or industrial network, and others in or connecting with this network expect certain other behaviors from other worker, managers, and customers. Positions exist whether occupied by a person or waiting to be filled by a person.

Job: A job, as first defined by Shartle (1952), is a group of similar paid positions requiring some similar attributes in a single organization. Jobs are task, outcome, and organization-centered, and in a sense independent of people.

Occupation: As in Shartle's scheme, an occupation is a group of similar jobs found in various organizations. Occupations are task, organization, economy, and society-oriented and may be said to exist. as do jobs, whether or not they are pursued by anyone. Thus, the occupation of fletcher can still be described, whether or not arrows are manufactured today, and that of thatcher has recently been revived in the United Kingdom with the restoration of traditional cottages in the historic preservation movement.

Vocation: An occupation with a commitment, distinguished from occupation primarily by its psychological rather than its economic significance. Vocations are ego-involving, meaningful to the individual for reasons other than their remunerated, productive, distributive, or service outcomes even though these may be valued. Vocations are task, outcome, and person centered.

Avocation: An avocation is an activity pursued systematically over a period of time, for its own sake and with an objective other than monetary gain, although it may incidentally result in gain. Avocations are task, outcome, and person centered.

Career: In scientific usage, the sequence of positions occupied by a person throughout a pre-occupational, occupational, and post-occupational life, it includes work-related roles such as those of student, employee and pensioner, together with complementary and supplementary familial, avocational, and civic roles. A career exists only in the person pursuing it: careers are person-centered. ("Via carraria" in Latin means a cart track or road, but each person runs his or her own race in his or her own way.)

But there is no end to the terminological problems, and a final set of terms must be creat'd if clarity and economy are to be achieved. In his important recent review of theory and research on organizational behavior, Schneider (1985) addresses the meanings of the terms motivation and attitudes, and in an earlier review, Super (1976) deals with the use of terms such as involvement and commitment. We have thus identified not only the life-role, institutional, and content or behavioral domains, but an affective domain.

The Affective Domain

This domain is cental to the discussion of the importance of work, and here too each of the commonly used terms is given a variety of meanings, depending on the writer. For this reason, the Work Importance Study (WIS) accepted the set of definitions proposed by Super (1976), which needs itself to be supplemented by Schneider's (1985). The WIS settled on the term salience as a relatively unused term to denote importance in any way, whether expressed in behavior or in words.

T'c model of importance or salience (Super, 1982), shown in Figure 1, postulates that there are three components of salience: the attitudinal which is called commitment, the behavioral which WIS called participation, and the cognitive which is called knowledge. Tests of this model in the United States (Super, 1982) and in other WIS countries have given support to it. In the American study, Super used the Career Development Inventory's scales of World of Work Information and of Knowledge of One's Preferred Occupational Group as cognitive measures and the WIS salience Inventory's Commitment and Participation scales to assess the affective and behavioral components of the WIS Model of Role Importance shown in Figure 1. Correlations between the scales justified the distinctions made by the model, being very low and insignificant in students, but somewhat higher in the case of employed adults, as hypothesized.

A MODEL OF THE IMPORTANCE OF WORK &

OTHER LIFE CAREER ROLES

Importance

Involvement   Interest   Engagement

Commitment   Participation   Knowledge
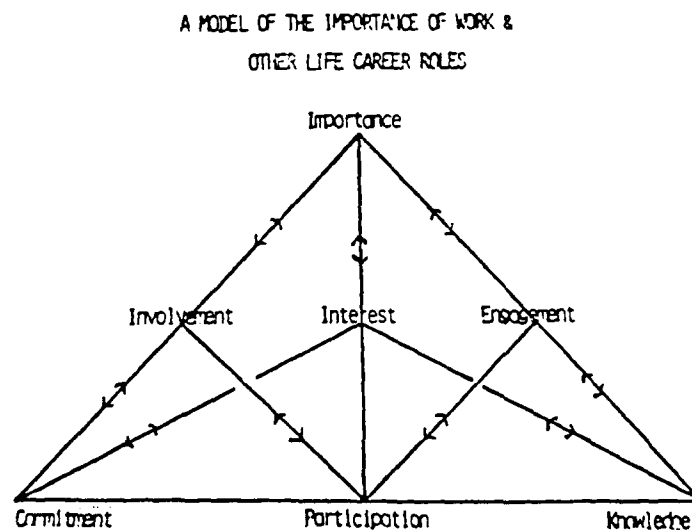
Based on Super, D. E. (1982). The Relative Importance of Work. The Counseling Psychologist, 10, 95-104.

Figure 1. A model of the importance of work or other life-career role.

Commitment is possible with little knowledge--one does not need to know much about a role or a person to identify with it. It contributes to what is called involvement, but an important contribution of the WIS is the suggestion that involvement is a combination of the affective and of the behavioral as shown in Figure 1. Feeling and behavior combined are involvement. The confusion of terms in the literature is exemplified by Blau's (1985) statement that involvement is a unidimensional construct which is operationalized in terms of psychological identification with work, by Muchinsky's (1983) failure to even consider the possibility of distinguishing between them, and by Morrow's (1983) conclusion that these constructs are "partially redundant and insufficiently distinct to warrant continued separation." But we have just seen that with carefully made distinctions in the constructs, good instrumentation, and simple distinctions such as Batlis (1978) has made between antecedent and consequent variables in a nomological network, the terms are indeed meaningful.

Rabinowitz and Hall (1975, 1981) provide another example of clear distinctions in their demonstration of the fact that job involvement relationships vary with career stage. Those who continue to use broad and all-inclusive definitions and measures such as those used by Lodahl and Kejner (1965) in their pioneering study have failed to learn from subsequent work. It will be useful here to go back to Schneider's (1985) distinction between attitudes and motivation, in which the former are feelings about objects, conditions, and outcomes, while the latter is the energizing and directing of efforts toward their attainment (pp. 578-579). Motivation is thus the bridging of the gap between attitudes and behavior, and commitment is an attitude which may or may not motivate participation, a useful distinction supported by Super's (1982) WIS study of the model.

APPROACH

This review does not aim to cover all the literature in a systematic way. Rather, it aims to relate some of the relevant findings to each other and to Navy personnel. Considering the methods and instruments available, Schneider's (1985) review was relied upon heavily, as were the Work Adjustment Study of Dawis and Lofquist (1984), the Meaning of Work Study (1987) and the work done as part of the WIS (Nevill & Super, 1986a, 1986b; Super, 1982). A newly published text by Saal and Knight (1988) has helped to supplement these studies, as has a computer search of Psychological Abstracts. Reference is also made to military and naval studies summarized by Moos (1986).

RESULTS

Schneider's 1985 Review of the Literature

From a long-term perspective, Schneider (1985) pointed out that 30 years ago common motives were attributed to workers, who were usually studied in one organization such as the Hawthorne plant of Western Electric. It was assumed that individual differences in these motives would prove to be the universal major determinants of work behavior, an assumption generally not supported. Expectancy theory, as formulated by Vroom (1964) and then by Porter and Lawler (1968), then led to a sizable volume of research. Goal setting theory had more appeal to managers, as a theory that could be applied to groups without attending to individual differences (Locke, Shaw, Saari & Latham, 1981). Schneider notes that the setting of specific, difficult goals accompanied by feedback is a proven method of motivating workers, with the suggestion that the nature and role of feedback is a topic worthy of further research.

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Job Characteristics Research

Job characteristics research is noted as another fruitful line of motivation research focusing on the centrality of work (work importance) as a motivator that can be related to design of work tasks. This approach does have the advantage of taking into account the individual worker's perception of nature of one's work, focusing on the work itself, unlike equity theory (Adams, 1963; Cosier & Dalton, 1983) which focuses on pay.

Motivation Research

Schneider summarizes the work on motivation research by stating that it is unfortunate that the "universalistic motivation theories of Argryis and McGregor are not thought of as motivation theories any longer," but rather as "theories of organization design perhaps included under the Quality of Work Life." As such, he believes that they neglect the idea that people with differing motivations are attracted to different kinds of organizations as in Holland's (1985) and Schein's (1978) work. Schneider notes, too, that contemporary motivation theory lacks good new testable frameworks depicting internal states along the lines of the older need-based and expectancy theories, although "in research on turnover . . . internal states (values?) return as important for understanding human behavior at work" (p. 578)

Job Satisfaction Research

Schneider pointed out in 1985 that job satisfaction has received far more research attention than has motivation. It is clearly a topic that I/O psychology has found fruitful as one category of attitude: as noted above, it is a feeling about something, whereas motivation is the energizing and directing of effort toward the attainment of something. His review of research led Schneider to conclude that we have no theories, other than perhaps equity theory, as to what leads to job satisfaction, and it merely specifies what leads to dissatisfaction.

Industrial psychology may have accorded job satisfaction its place of importance because it can easily be studied in relation to important, practical issues such as flextime and unions. It may have done so simply because satisfaction is considered an important outcome in human life, despite Thomas Carlyle's sour comment to the effect that happiness was perhaps good for dogs, but not for people. More practically important is the fact that job satisfaction has often been found to predict work behavior such as turnover (Youngblood, Mobley, & Meglino, 1983) and perhaps absenteeism (Clegg, 1983). As a result of these findings, Schneider considers it important to construct conceptual models of job satisfaction, models which take into account the great variety of variables needed in the model.

Global job satisfaction appears to be more important than its many components, interesting and important though they may be in a particular situation, for as Schneider notes, this is what one must predict, especially as global satisfaction is not equal to the sum of the identified parts.

Person-Environment Fit Research

There has been much attention during the last two decades, to person-environment fit (Dawis & Lofquist, 1984; Holland, 1985; Pervin, 1987; Pervin & Lewis, 1978). But, as Schneider points out, each research focuses on only certain variables of immediate interest, and there is no generally accepted taxonomy for such studies. Perhaps the most

useful so far is one developed at the American Institutes for Research (Card, Goodstadt, Gross, & Shanner, 1975), Figure 2, which has the advantage of attempting to be a general model. Card and associates then turned it into a specific model for a study of retention and turnover in the Reserve Officer Training Corps (ROTC). Although they did not exhaust the possible list of important variables, as their focus was on selection more than on retention, Card's work shows, as does that of Sewell and Hauser (1975) with high school students, the power and the potential of path models in the multivariate study of human behavior.
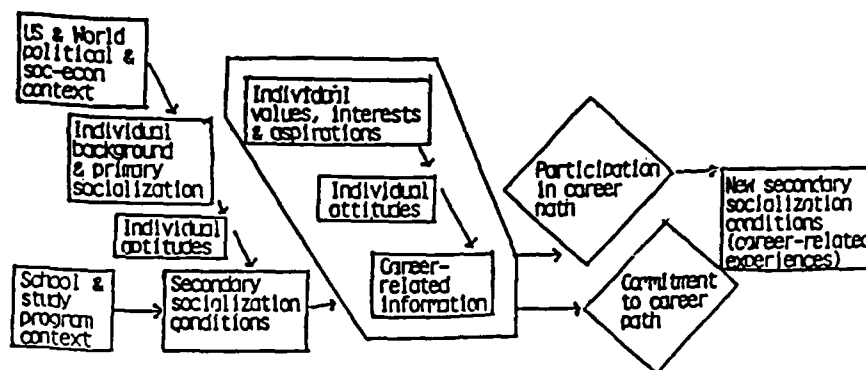
Adapted from Card et al. 1975, Fig. 1.2 A Framework for viewing the ROTC/Army Career Commitment Process.

Figure 2. General model of career commitment in young adult years.

Schneider, whose review covers only the span of years set by the Annual Review, does not mention Card or Sewell, but does cite important studies by Butler (1983), Greenhaus, Seidel and Marinis (1983), Sterns, Alexander, Barrett and Dambrot (1983) and Wiggins, Lederer, Saldowe and Rys (1983), using subjects such as employed clerical workers and teachers. Many studies, however, fit into the pattern pioneered by Holland (1985) and widely supported. This pattern has both the strength and the weakness of using a global measure of personality (the Vocational Preference Inventory, which postulates that occupational preferences can be used to assess personality traits) to match individuals and groups of workers. It thus considers the preferences of the occupational group an adequate representation of the occupational context. They do this well, but perhaps not sufficiently, for while there is much empirical evidence to support the Holland empirically-derived theories, derived from data of Strong's (1943), Kuders's (1976), and Roe's (1957), among others, the representation of contexts, if not of people, solely by their vocational preferences seems unduly limited and likely to leave out too many environmental variables, or at least to assess them in an indirect manner that is empirically limiting and conceptually unsatisfactory.

Role Stress Research

Role stress has been another popular field of study in I/O psychology, although it is a relative newcomer in the field despite studies such as those of military chaplains in WWII by Burchard (1954). Again, Schneider notes, theory has lagged behind the development of measures and the proliferation of bivariate studies, and there is confusion of terminology

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so that satisfaction, organizational identification and role stress fail to emerge as discrete constructs.

Morrow, for example, cited one study in which role conflict and role ambiguity correlated about .20 to .35 with organizational commitment, job involvement, and various facets of satisfaction, fact difficult to interpret due to the lack of a theoretical network such as is found in path models. More complex research designs, reflecting theoretical formulations, are now shown by Jackson's (1983) use of a modified Solomon four-group design permitting "more-than-usual causal ordering," and Bateman and Strasser's (1983) study of the satisfaction of nurses using a reciprocal causal relationship with job design in a cross-lagged regression model. In another study noted by Schneider, Murphy (1983) investigated the utility of three stress-reduction techniques and was able to conclude that two of the tree methods were effective not only in reducing tension, but also in increasing job satisfaction.

Life-Job Relationships Research

Another notable trend reported by Schneider is the emergence of studies of life-job relationships. Bhagat (1983) and Martin and Schermerhorn (1983) are cited as having developed frameworks for studying how life events and work factors jointly determine satisfaction, and then both physical and mental health. Theory and method have, it seems, now reached a point at which the interactions seen in cases such as that of John Stasko (Super, 1957, pp. 136-146) and in models of life roles (Super, 1980) can now be turned into testable hypotheses and quantitatively analyzed. Studies of dual-career couples are a good example.

Work Commitment Research

Commitment has been carefully and systematically examined by Morrow (1983) focusing on work commitment defined as a focus on values (as in the Protestant work ethic), career salience or focus, job focus or involvement, organizational focus of commitment and identification, and union focus or attitudes. Morrow concluded (p. 486) that " . . . these concepts are partially redundant and insufficiently distinct to warrant continued separation."

There can be little room for quarrel with Morrow's (and, implicitly) Schneider's conclusion that the topic is characterized by conceptual and terminological confusion, but if Morrow had not been confined to journal article length she might, like Kanungo (1982), Super (1976), and the WIS group (Knasel, Super & Kidd, 1981; Nevill & Super, 1986a; Super, 1982), have concluded that with adequate conceptual work and careful instrument construction some of these constructs can be differentiated and usefully studied. Part of the solution lies in avoiding instrumental contamination caused by the use of similar items in instruments with differing names. The definitions preferred on page 5 and in Figure 1 in the section the affective domain reflect such work.

Following the work of Katz and Kahn (1978), Bateman and Organ (1983) and Smith, Organ and Near (1983) present the idea that it is behaviors that go beyond the job description that define or reveal commitment: it is just such behaviors and attitudes that constitute the items of the WIS' Salience Inventory's Commitment Scale (Super & Nevill, 1985). The sample behaviors cited by the first-named group of writers are cooperativeness and crisis performance, while the WIS Study's commitment behaviors are more normal everyday behaviors such as attitudes toward reading about one's field of work, taking pride in one's work, finding it fulfilling to do one's work, and considering it

important to use all of one's skills and knowledge in one's work. The WIS approach has the advantage of lending itself more readily to assessment of commitment in typical workers and in students and recruits.

Socialization at Work Research

Socialization at work has long been a topic of interest to I/O psychology and to sociology, as has also anticipatory socialization: one might even say that both are crucial to career education in school and university, and that the former is a major objective of vocational and of professional training. Schneider points out that in the past socialization has been at the foundation of organizational attempts to influence employee attitudes and behavior, and that research has thus centered on what organizations do to people and how people experience and cope with these, to induct new workers (Van Maanen, 1976; Louis, 1980). "More recent work has introduced the idea that people approach new jobs from different experiential backgrounds so the outcomes of the "same" socialization processes may differ across people" (Schneider, 1985, pp. 583-584, citing Jones, 1983).

Feldman and Brett (1983), in a paper that Schneider considers one of very few examples of work that recognizes the role of the individual in the socialization process, showed that people are proactive in socialization and seek the help of others in it. It is strange that I/O psychology has been so late in recognizing this, for personality theorists (White, 1952), and social psychologist (Elder, 1968; Goslin, 1969), and a few vocational psychologists (Super, 1957; Super, Starishevsky, Matlin, & Jordaan, 1963) have put much emphasis on the development and implementation of self concepts and even made anticipatory self-socialization central to career development theory (Super, 1984). Schneider considers the merger of differential psychology and socialization theory likely to be productive of progress in industrial and organizational psychology, specifically, it would seem in training.

Turnover Research

Turnover is the last topic addressed by Schneider in his recent review: it is viewed as the criterion most often used in attitude studies. Turnover models are identified as those of: (1) early participation as exemplified by March and Simon (1958), (2) its "intermediate linkages" version (Mobley, Griffeth, Hand & Meglino, 1979), and (3) the matching model patterned after the work adjustment theory of Lofquist and Dawis (1969), revised by Dawis & Lofquist, 1984). Support has been found for the hypothesis that the desirability of a job helps to predict intra-organizational movement better than it does movement to another organization; perhaps this points to the importance of socialization, of the feeling that the familiar is good and worth some sacrifice.

The above is supported by the findings of Rusbalt and Farrell (1983) and of Sheridan and Abelson (1983), in support of Clegg's (1983) simultaneous conclusions to the effect that turnover is the result of failure of the organization to hold rather than the effect of repelling. Schneider suggests that satisfaction is therefore less important than commitment as a predictor of turnover, and other work supports this. Commitment being the principal determinant, then socialization leading to it is of central importance--both anticipatory, post-entry, and continuing. There appears to be a need for studies of the relationships of these three types or stages of socialization, and of their relative importance under varied circumstances. In the case of naval recruits, do they need to vary with the pre-service naval experience and exposure of recruits? Does the socialization program for women need to differ from that of men? If so, how? Does coming from a Navy family have the same importance in peacetime, during international

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emergencies, and during war time? Do loyalty-building programs have equal importance in those three types of world conditions?

Other Recent Studies

Other than Schneider's review, there are two major recent studies that merit special attention. They are the long-term studies of the Minnesota I/O group led by Dawis and Lofquist (1984) and the short-term international project known only as the Meaning of Work (MOW, 1987).

The Minnesota Study

The Minnesota Work Adjustment Study (WAS) began in the 1950s, although its definitive, empirically based, theoretical monograph was published some 25 or 30 years later, representing a whole generation of work by a dedicated team.

The project has had a variety of reports and a number of senior authors, all of whom have played major roles over a long period of time. The potentially final report is by Dawis and Lofquist (1984) and is subtitled "an individual difference model and its applications." As Figure 3 shows, it is based on the relationship between personal qualities (aptitudes, traits, and values) as seen in people individually and in occupational groups of people. Thus it is based on "trait and factor theory" as developed at the University of Minnesota in the 1930s (Paterson & Darley, 1936), applied more widely and officially adopted by the U.S. Department of Labor (DoL), and adapted by the Air Force (Flanagan, 1948), Army (Maier & Fuchs, 1972), and Navy (Stuit, 1947) for personnel classification purposes. This same theory has been adapted by many college and university centers for vocational or career counseling (Super, 1949), and by many businesses and industries using either their own batteries of tests or the Department of Labor's General Aptitude Test Battery (Dvorak, 1947; Super & Crites, 1962). The armed services relied primarily on aptitude tests, but did some important work on interests and personality traits (Flanagan, 1948), which was no doubt based on the long-term research of Strong (1943, 1955).
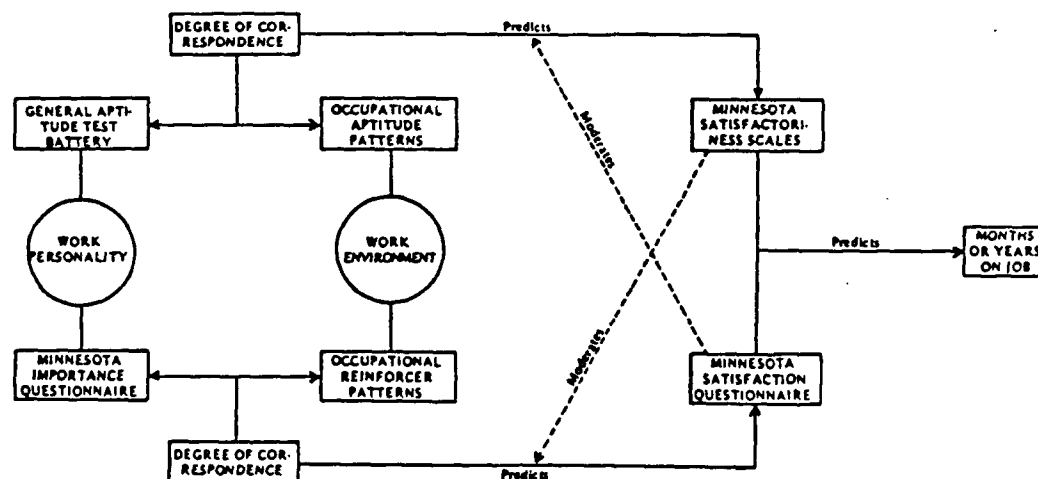
From Dawis and Lofquist, 1984, Figure 6.2.

Figure 3. The theory of work adjustment in operational terms.

The WAS model is more readily understood from its graphic representation than are most, so little explanation is necessary. It should be noted that it spells out more fully than, but closely resembles conceptually, the models of self-concept matching proposed by Super (1951, 1957; Super, Starishevsky, Matlin, & Jordaan, 1963) and of congruence between personality "types" and occupational incumbents developed by Holland (1985). In fact, Holland's twenty-year-long work provides a good deal of validation for the approach used by the WAS, and vice-versa. The distinctive quality of the WAS is that it takes aptitudes more adequately into account; at the same time, it is not as comprehensive as Super's (1957) formulation nor does it include, as do Card et al. (1975) and the MOW, the contextual determinants such as the stage of industrial development and the family structure and traditions that Vondracek, Lerner, and Schulenberg (1986) have so well developed. Nor does it provide for the developmental changes in both the person and the situation that Card, Super, and Vondracek, et al. discuss. The great advantages of the WAS model are its simplicity and its testability.

The WAS theory is stated by Dawis and Lofquist (1984, pp. 56-57) in a way that is reminiscent of exponents of theories of homeostasis such as Festinger (1957), Lecky (1945), and Rogers (1942), although some of these writers have evidently worked in ignorance of the work of others. The WAS' abbreviated statement of their theory follows:

Work is an interaction between an individual and a work environment in which each has requirements of the other.

The work environment requires certain tasks to be performed and the individual brings skills to perform the tasks.

The individual, in exchange, requires compensation for work performance and additional conditions of work such as a safe environment, a comfortable place to work, congenial co-workers, a competent supervisor, and an opportunity to achieve.

As long as the environment and the individual continue to meet each other's requirements, their interaction is maintained.

When the requirements are not met, the individual or the environment moves to change or terminate the interaction.

The mutual responsiveness of the individual and the work environment to each others's requirements is a continuing process called work adjustment. The degree to which the requirements of either or both are met is described on a dimension called correspondence.

The basic motive of work behavior is seeking to achieve and maintain correspondence.

Two primary indicators of work adjustment are the satisfaction of the individual with the work environment and the satisfaction of the work environment with the individual, or individual's satisfactoriness.

Both satisfaction and satisfactoriness are required for the individual to remain and be retained on the job. Tenure is the outcome of work adjustment.

The principal characteristics of the individual in relation to work adjustment may be collectively called the individual's work personality.

The work personality consists of at least two sets of characteristics: status characteristics (personality structure) and process characteristics (personality style).

Personality structure may be described in terms of the individual's skills and needs or in terms of the reference dimensions for skills (abilities) and the reference dimensions for needs (values).

Personality style describes the individuals's typical ways of interacting with the environment (given a particular personality structure) on such dimensions as celerity (quickness of slowness in interacting with the environment), pace (level of activity typically exhibited in interaction with the environment), rhythm (typical pattern of pace in interaction with the environment), rhythm (typical pattern of pace in interaction with the environment), and endurance (duration of interaction with the environment).

The work environment may be described in terms commensurate with the description of work personality. Work environment structure may be described in terms of skill requirements and need reinforcers (classes of stimulus conditions the presence or absence of which is associated with satisfaction of needs). Work environment structure may also be described in terms of reference dimensions for skill requirements (ability requirements) and reference dimensions for need reinforcers (reinforcer factors). The characteristic patterns of ability requirements and of reinforcer factors for the work environment of an occupation may be respectively referred to as an occupational ability pattern and an occupational reinforcer pattern.

The style of work environment may be described in terms of its requirements of celerity (speed of response), pace (level of activity), rhythm (typical pattern of pace), and endurance (duration of response).

The WAS theory is stated in more detail and more testably in the form of 17 propositions, a number of which have corollaries, lending an air of scientific precision to the project. But the tests of the propositions are not as neat as might be desired, for while some are studied for this purpose, the results of other work related to other hypotheses inferred from the propositions are drawn upon, and some of the planned testing is of lesser consequence than one would expect. Thus, that satisfaction and satisfactoriness are somewhat discrete constructs is shown by the fact that they have a common variance of not more than 10 percent, a not very important finding in view of the substantive difference in the prescribed content of the scale. The proposition that satisfactoriness is a function of the correspondence between the abilities possessed by an individual and those required by that person's job is "supported" by correlations of from .05 to .38, with a median of .20, this last being statistically significant, but likely to be of practical importance only if combined with relatively independent predictors such as interests and personality traits and health, a multivariate type of analysis which was not performed by the WAS.

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Some of the independent studies cited in support of the propositions had presumably already served as bases for those propositions, disqualifying them for use as evidence in testing them: the work of the DoL in creating occupational aptitude patterns is thus used. In view of the small samples used by the DoL in most of its studies, independent support should have been sought or the support should have been treated as merely justification for establishing the hypotheses to be tested. The relationship between values (mistakenly and idiosyncratically called needs by the researchers) and job satisfaction was carefully tested by validation and cross-validation, a procedure often vaunted but too rarely used. However, the method was superior to the expected results, as correlations ranging from .46 to .92 in a variety of occupational groups shrank from -.09 to .48, with a median of only .27 (significant at the .01 level). Again, the results are of theoretical interest but of little practical value. And again, the use of multiple regression or multivariate analysis with a greater variety of predictors such as abilities and personal health, plus situational determinants such as working conditions and supervision, might have provided a more useful theoretical picture and more useful data.

A few other propositions found greater support, but in general they are rather disappointing in their marginality, their indirect support, and their atomistic analyses. Work adjustment is a complex phenomenon, a process of the adaptation of complex people with complex backgrounds to complex situations. It is only recently that statistical methods and data processing equipment have made the needed types of research possible. It has not been uncommon for researchers to be ahead of their times.
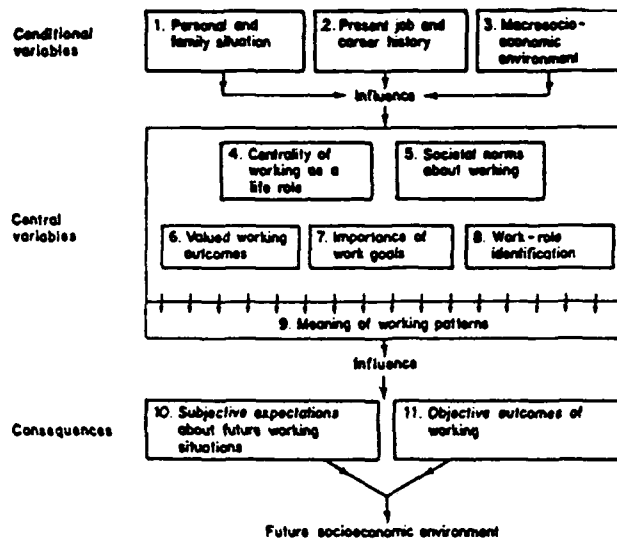
The Meaning of Working Study

The MOW began in 1978, in the same year and with antecendents very similar to those of the WIS. The MOW worked at an unusually fast pace, in countries with differing (although in all cases modern industrial) conditions, and took time to carefully develop its theoretical basis and its empirical methods. The MOW's unique importance warrants detailed attention here.

Two figures are most helpful in its exposition, one being MOW's heuristic research model (Figure 4) and the other (Figure 5) its "content sets of work meanings."

The heuristic model is essentially the same as those of Card et al. (1975) and of Sewell and Hauser (1975), starting with personal and family situations, present job and career history, and the great socioeconomic environment. It differs in that these are all treated as "conditional" variables (i.e., as givens, rather than interacting variables): it might be better argued that the first set interacts with the third to produce the second (the job and career history), which in turn produces the fourth, sixth, seventh, and eighth. The fifth "central" variable also seems ill-placed, for it is an outcome of the third, a social and not a personal variable, one that has impact on the person, and helps to produce "central variables" numbers 4, 6, 7, and 8. But our immediate purpose here is the exposition of the MOW Models, not their critique.

It is important to note that work centrality is defined as a general belief about the value of working in one's own life, which is conceptually different from involvement in the present job. The MOW team seeks to differentiate between identification with work and involvement in or commitment to working. The former is based on a comparison of the concept of oneself and the concept of work in which work becomes part of the self image as in Super et al. (1963). Involvement is used as a synonym for commitment, thus differing from the WIS definitions which, as Figure 1 has shown, makes finer distinctions.

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From MOW (1987), Figure 2.1.

Figure 4. Heuristic research model.
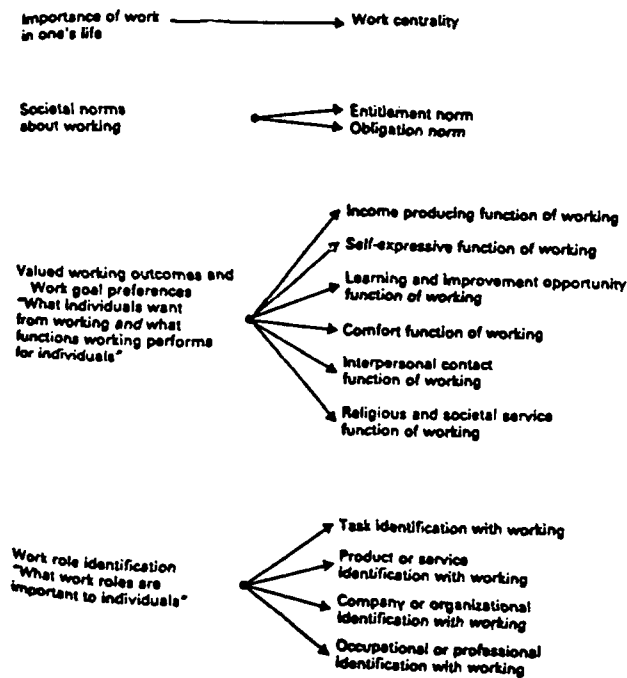
From MOW (1987), Figure 4.1.

Figure 5. Major content sets of working meanings.

That the WIS refinements are warranted is perhaps recognized by the MOW statement (p. 18) that "Work involvement is an affective response to working as a part of a person's life . . . (and) also may include behavioral elements such as the amount of time spent participating in work activities."

The second MOW model (Figure 5) serves to elaborate upon the concept of work centrality, which is viewed as paralleling Dubin's (1956) notion of central life interests, Barker's (1968) theory of behavioral settings, and Heider's (1958) theory of interpersonal relationships. It also resembles the WIS (Super, 1982) model of life career roles or role salience. Societal norms of work are classified as (1) those in which work is something to which one is entitled, and as (2) something to which one is obliged. The sixth entity in the basic mode (Figure 4) is also elaborated in Figure 5, in which valued working outcomes are identified as six in number, ranging from income to service. It has often been shown (Dawis & Lofquist, 1984; Nevill & Super, 1986b) that as many as 21 differing, but not independent, values can be identified, and that these can be reduced to a lesser number by factor analysis: thus the content of valued economic rewards is conceptually different from that of valued economic security (Nevill & Super, 1986b) and their scales are internally consistent, but factor analyses show that they have the same factor loadings: similarly, altruism and aesthetic values are conceptually and empirically differentiable, but highly correlated and factorially similar.

The separation of values from their goal importance in Figure 4 seems nonfunctional. Work role identification, number 8 in the first model, is in the second model broken down into four foci or objects of identification: tasks, products, organizations, and occupations. This is conceptually, and as in some prior work (Super & Culha, 1975) a practically useful set of distinctions: it helps to identify the omission of work products, in Super's (1976) schema, for the products of work may be objects of identification, as in the case of the Wright brothers' early identification with bicycles and their subsequent identification with and participation in work with airplanes.

The MOW authors present no graphic model of the first three boxes in their general heuristic research model (Figure 1), but describe their conceptual model in the text. For brevity in presentation, Super has sought in Figure 6 to reduce the details of those boxes and the text (pp. 27-36) to a graphic model, and in the process encountered what appeared to be some need for clarification and completion. We have attempted to do this without doing violence to the original schema or terminology. One change, for example, is the addition of directional arrows which are sometimes unidirectional and sometimes bi-directional, showing causation. Another is the suggestive definitions of the macro-environment included in the frame of the model. These modifications make the MOW Model resemble more closely the causal path model drawn by Card and associates (1975) (Figure 2).

Methods of the MOW. Dependence in the MOW was placed on both interviews and questionnaires, the former to last no longer than 1 hour, including some open-ended questions. Questionnaires were administered orally, as interviews, in most countries, but as personally delivered, mail return forms in others. The questions were tried out and refined in pilot studies. Some sets of questions constituted scales, other were treated singly. Many multivariate analyses of variance were used in treating the data.

Findings. The economic rationale for working dominated in rather more than half of the national respondents, and was nearly three times as dominant as the next most frequent rationale for working. The second was most abstract, and included self-expression. The structure of valued working outcomes, or work meanings, was basically

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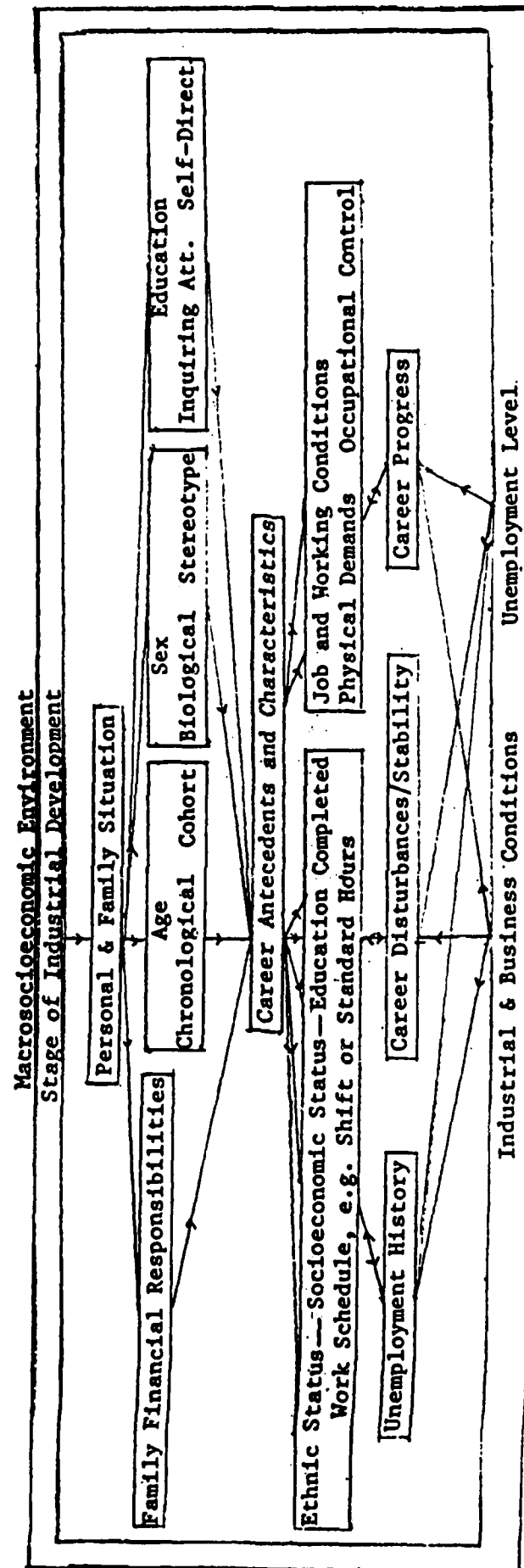
Based on MOW (1987) text, pp. 27-36.

Figure 6. Conditional variables affecting the meaning of working: An attempt to depict the MOW model graphically (DES, with revisions).

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the same from one country to another (all industrialized, but differing as much as the United States, Belgium, West Germany, and Japan). Individuals varied greatly within countries, by and within occupation, age group, sex, and educational level. The great majority would continue to work even if they could live comfortably without working, work was second only to family in life-role importance as judged by simple rankings, and there was no clean belief that work would become more or less important during the coming years.

There appear to be important national differences in the expectations of work, for in Britain, Israel, Japan, and Yugoslavia work rights and duties (expectations and obligations) are about balanced; in Belgium, the Federal Republic of Germany (FRG), and the Netherlands working rights are endorsed more than working duties; but in the USA duties dominate over rights.

It is interesting work that is most valued, and interest was found to be defined in terms of ability utilization, autonomy, and variety. Good interpersonal relations and job security are also valued, as are opportunity to learn, to advance, and to have good working conditions. These, it may be noted, are values typically assessed in other studies, from Hoppock's (1935) early landmark study to the Minnesota (Dawis & Lofquist, 1984) and WIS (Super, 1982) projects, generally in more statistically refined ways, but often with less well selected samples.

Work is seen as a burdensome activity by very few people: it is, rather, a regulated activity which is either a duty or a means of social integration. National differences seem to fit our general perceptions: the Japanese work-system involves company pressure to behave in formal and well-regulated ways, while the American and Belgian work systems define work in a more balanced way in which material gains, responsibility, social integration, and burden-bearing all figure. Work centrality, a global concept that encompasses all of the above perceptions of work, is highest in Japan as reported by the MOW study, fitting the stereotype, and lowest in Britain among the industrialized countries participating. But, as the MOW team points out, it was something of a surprise that Yugoslavia is second highest and Germany (the Federal Democratic Republic (FDR)) is second lowest. The United States ranks about in the middle of these eight countries.

As the team also notes, Weber's (1958) attribution of the work ethic to Calvinism is unwarranted: it points out that it is perhaps the recency of industrialization that distinguishes the centrality from the marginality of work. This fits the WIS findings in Israel (Krau, 1984) and the United States. In the latter country (Nevill & Nazario, 1982), recent Cuban immigrants scored higher on work salience than did their compatriots who immigrated a decade earlier and were, by the time of the study, established in their new country. But one would not be warranted in turning Weber's hypothesis around after de-sanctifying it, for it hardly seems likely that industrialization would increase the motivation to work; quite the contrary, given what we know about the working conditions of workers in newly emerging industrial economies, both those of the Industrial Revolution and those in which new American immigrants find their opportunities. It is more likely that the emergence of new workers coincides with the availability of employment opportunities for the underprivileged and, like a match touching tinder, causes a conflagration: industrial change.

Seeming to contradict this conclusion is another MOW finding to the effect that work centrality is greater in older than in younger people. But given the fact that the MOW is a cross-sectional study, not longitudinal, we cannot conclude that work centrality

increases with age. Compatible with the above conflagration hypothesis is the interpretation of the age difference as a function of industrialization and opportunity: it is the younger people who emigrate and who find or make new opportunities and advance on the socioeconomic scale (WIS), but it is the younger non-migrating people who are least motivated (MOW). We are not looking at the same subjects, and the Nevill and Nazario sample is quite different from that of MOW; therefore it may be legitimate to conclude that the younger people do consider work less central in their lives, save when they change from a closed society to a more open one, as in the Cuban migrations to the United States.

Military Studies: The Military Environment Inventory (MEI)

In his current Manual, Moos (1986) has summarized a number of studies, largely of Army personnel. His summary is drawn upon here. More than 1400 Army recruits were the subjects of a study of military environments and stress in basic training, finding that companies that emphasize personal status show less anxiety, depression, and anger than companies that show the greatest officer control: harshness, ridicule, punishment, and close supervision have negative effect. A variety of measures of performance were devised, and it was found that the recruits in high performance companies tend to help each other, talk to each other about personal problems, and understand the importa _e of the skills that they are learning. Noncommissioned Officers (NCOs) and officers in these companies know what recruits want and expect them to think and act for themselves.

In another study, sick call attendance was found to be related to strict officer control and with being kept busy with boring and repetitious tasks. Again, recruits with positive expectations or perceptions of basic training showed less in the way of negative feelings and lower sick call rates than those with negative expectations in a company with good morale, whereas they appear not to help when the social environment is negative: the environment presumably undermines the good expectations. This finding may fit in with the current finding of many industrial studies, to the effect that having a realistic picture of a company is correlated with the retention of new employees.

Hom and Hulin (1981) studies over 100 men in 29 National Guard Units, using the MEI and several criterion measures, including actual re-enlistment. Those who saw their units as more involving, supportive. well-organized, and recognizing of personal status were more inclined to re-enlist, and more did enlist.

In an NAVPERSRANDCEN study, Kerce and Royle (1984) adapted the MEI and other instruments to examine the work groups of women Marines who were in their first enlistment. Work climates differed more by work settings such as office and non-office than by tasks such as clerical versus nonclerical. Women in offices showed higher involvement, support, personal status, clarity, and organization. Whether this may have been a function of the greater familiarity of office work and settings than, for example. of communications work and settings is not clear, but should be considered.

Kerce and Royle also looked at traditional versus nontraditional career and family interests. The traditionals were more often found in settings that lacked involvement. support, personal status, organization, and clarity, although they did not differ in their descriptions of the social climates of their barracks. This leads one to wonder whether the traditionals felt misplaced in the traditionally masculine environment of the Marine Corps, even though they had chosen it and were in settings which in civilian life are typically female-dominated (offices). Royle (1984), in further studies of Marine Corps women, found that cohesive work groups that were clear, well-organized. provided

personal status and felt officer support believed that they were helped when needed and were important to the unit, and felt less harassment and showed less attrition (these last criteria being more acceptable than the former because of less item contamination).

The MEI Manual also states, citing a number of studies, that two similar scales from another inventory have been found useful in characterizing work environments that promote volunteering for additional duty, work performance, and similar attitudes and behaviors (Moos, 1986).

In the search for more studies of Navy personnel using well-established instruments, Super wrote to the authors of the Job Descriptive Index and the Minnesota Importance Questionnaire, asking whether they knew of such studies with their measures. As of February 1988, neither Smith nor Dawis knew of any; only the Minnesota Satisfaction Questionnaire, a criterion measure, appears to have been used with naval personnel (Pritchard & Peters, 1974) in a study of the predictive validity of job duties and job interests for intrinsic and extrinsic job satisfaction.

Instruments Available for the Study of Work Importance

A comprehensive and thorough review of the measures used in published studies of work has been made available by Cook, Hepworth, Wall, and Warr (1981), which covers in a way that is still quite up-to-date instruments that are relevant to this review. Only few new measures, such as the interview scales of the MOW, and the Moos and WIS measures, are not included. Cook and associates make no selective recommendations, but the data they cite and their discussions thereof provide bases for reader decisions. Eight categories of instruments are identified: (1) overall job satisfaction, (2) specific satisfactions (facets of satisfaction), (3) alienation and commitment, (4) occupational mental health and ill-health, (5) job involvement and job motivation, (6) work values, beliefs, and needs, (7) perceptions of the job, work role, job context, and organizational climate, and (8) leadership style and perceptions of others.

In the first category, general job satisfaction, 17 measures are dealt with; in the last, 12 are exhaustively considered, while 20 more are dealt with summarily. There is, of course, no point in trying to redo their work here, and none even in summarizing it all. Instead, some summary of what are here considered the most useful predictor and criterion measures is attempted. Although most of the categories may be viewed as both antecedent and consequent variables (e.g., job satisfaction may lead to greater productivity while certain leadership styles may be productive of job satisfaction), some are in some situations best used as criteria and in others best as predictors (e.g., in naval recruits in boot camp, leadership style may be a predictor and job satisfaction a criterion).

General Job Satisfaction

In this group, the outstanding American measures appear to be those of Hoppock (1935), and American pioneer who outdistanced the original pioneers in the British National Institute for Industrial psychology; Weiss, Dawis, England and Lofquist (1967) whose Minnesota Satisfaction Questionnaire serves as a criterion for its predictor, the Minnesota Importance Questionnaire (Dawis & Lofquist, 1984); and the Job Diagnostic Survey of Hackman and Oldham (1975). The many other variations of Hoppock's original work are too numerous for mention here. They have, respectively, 4, 5, and 20 items, as they are designed for quick survey work, although the Hackman and Oldham measure has a companion inventory of 14 items designed to yield specific satisfactions scores, as does

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the Weiss et al. measure with a 100-item precursor of which the 20-item short form taps the main dimensions. Both have seen considerable use and validation.

Specific Aspects of Satisfaction

Of the 10 measures described in detail here, the Job Descriptive Index of Smith, Kendall, and Hulin (1969) is no doubt the leader. It has 72 items dealing with type of work, pay, promotion, supervision, and co-workers. It has been well researched by its authors and by many others, holding up well in most studies. In a study of two military aviation units, for example, O'Reilly, Bretton, and Roberts (1974) correlated work, pay, promotion, supervision, and co-workers scales with Porter and Smith's (1970) commitment scale, finding correlations of respectively, .56, .45, .34, .40, and .47.

Porter's (1961) Need Satisfaction Questionnaire, with 13 items, seeks to assess Maslow-type needs rather than aspects of the job, thus differing from most measures in this category. Five types of need deficiencies are assessed: security, social, esteem, autonomy, and self-actualization. Security needs are covered by only one item, and the inventory's attractive theoretical base is not supported by good empirical work: a good idea is not implemented.

The Job Diagnostic Survey (JDS) of Hackman and Oldham (1975) is a manifold scale that includes a 14-item measure of five specific satisfactions: pay with two items, job security with two, social with three, supervision with three, and growth with four items. The first four deal with the work context, the last with intrinsic aspects of the job. The instrument is widely used, and the psychometric data are generally satisfactory, but two cautions need to be kept in mind, only one of them mentioned by Cook et al. Specific satisfactions do not correlate highly with general job satisfaction (r's of .42 to .69 are cited, with a median of .47) and it has generally been noted that the sum of the specifics (not cited by Cook et al.) is not equal to the whole or global job satisfaction, and Hackman and Oldham, like Porter and many others working in employment situations, have yielded to organizational pressures to develop brief measures which do not sample their domain well and that often lack reliability.

Cook and associates provide a useful table showing the specific job features covered by the measures reviewed, classified by instruments. These number 14, plus an "other" category; they range from supervision through career progress through personal growth to general intrinsic satisfaction. Only three assess career progress, a criterion considered important in Super's Career Pattern Study (Super, 1985) because it rather atypically considers long-term rather than short-term outcomes. Even the three measures that do not consider career progress consider perceived company potential for the individual, not the individual's satisfaction with his/her own career--a reflection of the domination of career development work by company goals rather than by a focus on the individual's career whenever pursued.

Alienation and Commitment

Sixteen measures are described in this section, four dealing with alienation, six with organizational commitment, three with job attachment or what might be called detachment, and three miscellaneous. Only the commitment scales are considered here, although, as Kanungo's (1982) unreferenced but masterly work underscores, this is an important topic, disregarded here because of marginal importance in a volunteer military or naval organization.

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Organizational commitment and job commitment, it should be noted here, differ as our earlier definitions suggest they should: the former is affective attachment to the organizations, with the job being secondary as in the stereotype of the "company man," while job commitment is affective attachment to the work of the kind of position that one occupies in the company . . . that is, unless users of the term and constructors of the measures confuse behavior with attitudes as did Lodahl and Kejner (1965) in their pioneer work.

Porter and Smith (1970) do not make the above error, but focus on attitudes. Organizational commitment is seen as identification and "involvement" (here they do slip, unless the latter term is also defined affectively); it is not only a belief in the organization and acceptance of its goals and values, but a readiness to exert considerable effort on behalf of the organization: Is this perhaps confusing commitment with motivation? The scale has 15 items, which are recognized as easily faked. Reliability and validity data are very good.

Other scales have followed in Porter's footsteps, some attain greater brevity, but otherwise none have shown better psychometric data nor been more widely used than Porter's. Such a scale might well be included in studies such as the present, if the focus is not on raw recruits who have not had time to develop genuine loyalty, tested loyalty.

Job attachment and leaving tendencies have generally been assessed by scales made up of very few items, one by Koch and Steers (1978) having just four items. The nature of the trait would seem to justify this brevity, although alphas in the .70s suggest that somewhat greater length might help. Presumably, a person intends to stay or to leave. But validity data are still sparse.

Job Involvement and Work Motivation

Cook and associates (1981) treat these two topics in a chapter separate and separated from that on Alienation and Commitment, without giving a rationale for this, although they do differentiate them from general perspectives on work such as that of the Protestant Work Ethic. Motivation is seen as involvement, and they use the Lodahl and Kejner (1965) instrument as the prototype while citing work by Hackman and Lawler (1971) Hackman and Oldham (1975). Their measures tend to be short and to have some face validity. But Cook et al. note some ambiguity in the constructs and a lack of needed detail on items and scales.

Lodahl and Kejner (1965) define job involvement as the extent to which a person's work performance affects his or her self-esteem, the work playing a central part in his or her life. Cook and associates point out that there is ambiguity in the focus on values in work (a general construct) and on wanting to perform well (job motivation). Such ambiguity is not surprising in a first effort, but that so much work has been done with minor variations on a blundering effort is distressing. It is perhaps noteworthy that like Bernreuter with his pioneer multi-trait inventory and unlike Strong with his many-scaled measure (see Super, 1945) these authors have not followed through on their early work.

Hackman and Oldham (1975) have done better, building on Hackman's earlier work with various colleagues and going beyond Lodahl and Kejner. The Internal Work Motivation Scale is part of the multifaceted JDS and seeks to assess feelings, good and bad, when working well or poorly. The scale has six items and went through a number of revisions, and has been much used along with or as part of the JDS; reliabilities of several

types (internal consistency and test-retest) have been reported, ranging from an exceptional low of .58 to .84, most of them being in the .70s. Part of the problem may lie in having sought to measure too many variables in one inventory: internal work motivation might have been better measured had it been the focus and had industrial time pressures not imposed such constraints. That the retest reliabilities ranged from .59 to .84 with Ns 71 and 173, suggests that the construct of internal work motivation as a rather stable trait would be worthy of further investigation with a somewhat longer and internally consistent measure.

Work Values, Beliefs, and Needs

Although Cook and associates include needs in this set of measures, it may be noted that the confusion of the field is reflected in the fact that Porter's (1961) Need Satisfaction Questionnaire is dealt with in the chapter on Specific Satisfactions instead of under needs, and in this review is therefore placed in the same section.

Values, beliefs, and needs are viewed by our source as the more enduring aspects of orientations toward employment in general, rather than as reactions to specific jobs or occupations (which may justify the placement of Porter's work above). Cook et al. identify three main groups of measures: (1) five that assess enduring commitment to paid employment, of which three deal with the Protestant Work Ethic: (2) three that assess higher order needs such as personal development and self-actualization in the Maslovian sense; and (3) a group of inventories of presumably the gamut of values suggested by others that assess only a few values of interest to the researcher, and still others that focus on specific valued objects or roles such as women, professionalism, and careers.

Warr, Cook, and Wall (1979) developed a six-item scale to assess the enduring commitment or "involvement" in work, using items easily handled by blue-collar workers. Alpha coefficients were typically in the .60s, retest in the higher .50s, and factor structure was unambiguous. Correlations with other measures of intrinsic job motivation were .37 and .28, with overall job satisfaction .30. These presumptive construct validity data are, however, of merely tangential interest; of much greater relevance would be relationships with absenteeism, turnover, and even supervisors' ratings especially in multivariate studies. And herein lies one of the real deficiencies in studies of this type: the proliferation of underdeveloped instruments seems to preclude the in-depth study of the central phenomena.

The strength of higher order needs would seem, in principle, to be a variable of great importance in the theoretical and applied study of work motivation and work behavior. One of the most persistent researchers in this area is Hackman (with Lawler, 1971; with Oldham, 1974, 1975), largely with this much used JDS (Hackman & Oldham, 1975). One of the problems again, is that much of the use of the JDS and its components such as the measure of Higher Order Need Strength has involved modifications which make generalizing difficult, but despite this it seems safe to conclude that, using from five to 12 items, with alpha coefficients in the .80s and even .90s, this is a useful instrument. Some relationships with Kindred scales appear promising, but real validation data appear to be lacking, at least at the time of the Cook review.

More data are available on a component of the above scale, called the measure of Individual Growth Need Strength. From A, using six items, has yielded alphas in the .80s and a 1-month retest correlation of .68. Some construct validity data have been reported, showing expected relationships with such variables as pride in work and job involvement, but not with behavioral, on the job, criteria such as turnover or re-enlistment. Studies of

higher order needs as moderator variables in real life situations would appear to be called for.

The manifest Needs Questionnaire of Steers and Braunstein (1976) is classified by Cook et al. with values scales, but is as its title suggests a need measure and is therefore considered here despite the fact that the needs are not of the highest order in Maslow's schema. It assesses needs for achievement, affiliation, autonomy, and dominance as defined by Murray (1938) and developed in McClelland, Atkinson, Clark, and Lowell (1953). The alphas range from the upper .60s to the high .80s, which given their length of five items each is fairly good, and the correlations with Jackson's Personality Research (1967) Form's corresponding scales are in the .40s and .60s and with independent ratings range from .33 to .74. The scales are relatively independent of each other. The scale appears worth of further use as the needs in question seem relevant to the theoretical or practical questions at hand. One might ask, for example, whether affiliation is related to peer cohesion on the Moos WEI, achievement to personal growth, and autonomy negatively to the system maintenance scales on the WEI, and how does need for autonomy relate to satisfaction and to re-enlistment in the Navy?

The values inventories considered by Cook and associates are Super's (1970) Work Values Inventory (WVI) and Dubin's (1956) measure of Central Life Interests. Although the latter has attracted much attention, it is not dealt with here as it does not yield continuous scores: it places people in categories. Super's WVI has yielded good data on students, but despite its good review has the disadvantage of having not been used enough in business and industry to warrant further consideration in view of later work with Super's other values measure (Nevill & Super, 1986b) on which adult data have been collected for more than 1600 adults (of whom more than one-third are females) as well as more than 2000 university students and similar numbers of high school students from the major American regions, not to mention comparable samples from a dozen other countries including Canada, Australia, Belgium, Italy, Poland, Portugal, Israel, and Japan.

As the WIS measures are dealt with in the report on the Navy study of which this review is a prelude, they are not discussed here save to mention that, in a recent report by McNab and Fitzsimmons (1987), the WIS Values Scales was shown to correlate very highly with the appropriate scales of other values measures (including Super's WVI), while assessing a greater variety of values in terminology meaningful to adults at all levels than all, but the Minnesota Importance Questionnaire (Dawis & Lofquist, 1984), which is aimed primarily at blue-collar workers.

Perceptions of Jobs, Work Role, and Job Context

These are dealt with in another chapter by Cook and associates. Two inventories appear worthy of mention here; the JDS of Hackman and Oldham (1975) and the Michigan Organizational Assessment Questionnaire (MOAQ) of Seashore, Lawler, Mirvis, and Cammann (1982). Both are multi-scale instruments, and the JDS has already been cited in this brief review.

The JDS has a 21-item measure of Job Characteristics: skill variety task identity, task significance, autonomy, and feedback from the job itself, plus other scales -one for feedback from agents and one on dealing with others. The seven scales have three items each. Data on reliability and validity are well summarized in a table by Cook et al., international reliabilities in two samples range from .58 to .78. A mass of other data are summarized in the text: This is clearly one of the most widely used and valid instruments in the general field of employee motivation and satisfaction. As Cook and associates put

it (1981, p. 182); it "has by now proved its worth," although they note that the evidence for five separate core-characteristic scales is not well supported by factor analysis. They recommend a formula for combining them in a "Motivating Potential Score" (p. 178).

The MOAQ, like the JDS, yields many scales, sometimes also at the price of satisfactory reliability. Nine sub-scales assess task characteristics with two or three items each: freedom, variety, task feedback, task completeness, task impact, task significance, training adequacy, required skill and pace control. The alphas are, respectively, .75, .81, .54, .58, .71, .45, .59, .71, and .83. The nine categories were presumably useful as specification for item-writing and for the empirical testing of the hypothesized types of characteristics, but as Cook et al. point out, factor analysis has shown that freedom and pace control load on the same factor, that task feedback, impact, and significance load on one factor and that the role characteristics scales (mentioned below) load on two factors (clarity is distinct, but conflict and overload are, not surprisingly, one factor).

The role characteristics scales, just mentioned, have alphas of, respectively, .53, .58, and .65, the first with three items, like the third, but conflict with just two.

Psychological states are assessed by four sub-scales: challenge, meaningfulness, responsibility, and knowledge of results, each with from two to four items, and with alphas of, respectively, .81, .50, .41, and .31 (the last three named have only two items each and have the low alphas). These subscales have, understandably, one underlying factor, and Cook et al. suggest combining the first three into a challenge scale.

Other scales are under development, making one wonder whether perhaps too much meaning is being sought with too little material. It is worth nothing, however, that in career counseling sub-scales of marginal or less reliability, when seen in the context of other case material and used in a collaborative approach to assessment, do often yield useful insights. They also help to define what may well be turned into combined scales such as that suggested as psychological challenge.

The logic and much of the psychometric data on the MOAQ make it look very promising, as does its actively researching and practicing source group. However, it still lacks the validity data, whether differential or longitudinal, that are needed for confident, non-experimental use.

Leadership style and perceptions of others are dealt with by Cook and associates in another chapter. These are of interest to us in connection with variables measured by the Moos Military Inventory used in the study described at the beginning of the report that is currently underway. Some, like the Taylor and Bowers (1972) instrument are interesting because, like the Moos, they seek to assess supervisory and peer leadership, but only the historic measures developed by Stogdill (1965) and by Fleishman (1957a, 1957b) are supported by much data, and they have been largely superseded by more recent instruments.

The MOAQ (Seashore et al., 1982) figures among these, as it has scales for supervision and for work-group functioning. Ten aspects of supervision are assessed by scales that contain from one (competence) to seven (work facilitation: subordinate relations), with alphas that range from .76 to .89 for the two-or-more item scales. There is considerable overlap between scales, but, again, they may be useful in diagnostic work if viewed as areas for further exploration in interviews and in group discussions.

Difference between groups will, however, be highly unreliable when scale intercorrelations are about as high as their reliabilities: a total supervision score may then be more useful.

The MOAQ's scales for work-group functioning, with 14 times and five sub-scales, seeks to assess group homogeneity, goal clarity, cohesiveness, open group process, and internal fragmentation. Alphas, with two to four items per scale, are in the .60s and .70s: two factors have been identified, one for the sub-scale called group homogeneity, and one for the others. It seems surprising that fragmentation and cohesiveness are not associated with homogeneity, but then it may be that likeness is indeed not associated with liking. Correlations with overall job satisfaction suggest construct validity: they are non-significant with homogeneity, negative with fragmentation, and positive with the other sub-scales.

Finally, Cook et al. have a chapter on measures of Occupational Mental Health and Ill Health (dealt with a sequence different from that chosen here). They note that, at the time of their review (already 7 years ago), work in this area was much less advanced than that in the others dealt with here. This they saw as due to conceptual difficulties concerning the components of ill health, to problems in the scaling of disparate components in obtaining an aggregate, and to the fact that psychological well-being is greatly affected by non-work factors such as family relationships and circumstances. Seven instruments are dealt with in some detail, five others very briefly, and 21 more are noted even more briefly without attempt at classification. The one instrument which looks most promising is described below.

The Anxiety-Stress Questionnaire (ASQ) of House and Rizzo (1972), built in part on the Taylor Manifest Anxiety Scale (a general anxiety instrument). It now contain 17 items assessing job-induced tension (seven items), somatic tension (five items), and general fatigue and uneasiness (five items). Less than half of the items mention work itself. K-R reliabilities were respectively .83, .76, and .72, and correlations with role ambiguity and role conflict in their own scales were from .07 to .22 for the former, the reliabilities still from .42 to .73. Others have reported reliability and construct validity data that are as good or better. No relationships between the ASQ and behavioral indices such as absenteeism have been reported.

SUMMARY AND CONCLUSIONS

The centrality of work, a construct identified a generation ago by a sociologist (Dubin, 1956), is a key construct in the study of work. Although Dubin conceived of it as central to a number of other roles which he identified, he did not study them in any detail. Nor did he develop a taxonomy of work, a task undertaken piecemeal by a number of psychologists from Shartle (1951), to Schneider (1985), and Super (1976, 1982). An attempt was made early in this report to organize them under the headings of work roles, institutions, content, and affect, and to relate work roles to other life career roles such as those of homemaker and leisurite.

Drawing heavily from the painstaking review and evaluation of measures by Cook, Hepworth, Wall, and Warr (1981), aspects of work are identified and discussed. These are classified as job characteristics, motivation, satisfaction, stress, commitment, a socialization, and turnover. The first two (characteristics and motivation) may perhaps be viewed here as predictors, and the last (turnover) as a criterion, while all the others can be used, and have been used, as one or the other: stress may predict satisfaction, but

satisfaction may reduce stress by making it worth the price. It should be noted here that not all aspects of work are included in this taxonomy, for skill level, educational level, income, security, and prestige level are not considered, although they have been often studied. This would appear to be because they are demographic, economic, and social rather than more traditionally psychological variables, and because of a focus on the measurement of these psychological variables.

For the purpose of this review, job characteristics, motivation, job satisfaction, role stress, commitment, and socialization for and at work seem most important. The last-named construct, much studied by sociologists such as Brim and Wheeler (1966), and Merton, Reader, and Kendall (1957), and summarized also by Moore (in Goslin, 1969) when occupational sociology was at its peak and as organizational sociology was displacing it in popularity, has unfortunately been rather neglected by psychologists. And yet socialization into the services is what boot camp, Navy Reserve Officers Training Center (NROTC), basic training and other programs have as their principal objective. Better studies of this process, and better methods of assessing its outcomes would be very useful. The Moos MEI appears to measure highly relevant constructs in an appropriate way: the Salience Inventory's focus on work and on study is equally relevant, but for Armed Services purposes a revision to include the military and naval roles should make it still more useful. Turnover, and perhaps sick call, are important criteria which are assessed from records but not, of course, by psychological instruments.

General job satisfaction has been well measured by the Minnesota Satisfaction Questionnaire and the JDS. Both also assess satisfaction with specific aspects of work, the JDS having the advantage of being a multi-trait inventory of greater scope. The Job Descriptive Index, however, may well be the best measure for specific satisfactions and is well suited to blue collar use.

Commitment to work, to an organization, and to a job have been identified as three discrete constructs and have good separate measures. Commitment to work has been best assessed by good beginnings with the internal work motivation scale of Hackman and Oldham's JDS, but further work is needed; the Salience Inventory, described in work on the current study, may provide a better general work importance measure by placing work in the context of other life roles. Commitment to the organization and to the job are well measured by the JDS; Porter and Smith (1970) have a good scale for organizational commitment, as does Moos.

Needs relevant to work are well assessed by the JDS and by Steers and Braunstein's Manifest Needs Questionnaire. Values measures are not so well covered by the Cook et al. compendium and review, but the outstanding measures are the Minnesota Importance Questionnaire (MIQ) and the WIS's Values Scale. The MIQ has the disadvantage, for some purposes, of being aimed at blue collar workers, but this suggests that it might be very useful with recruits. The values scale is more versatile, and is less parochial in its international origins, it has stood close scrutiny in a number of countries, as the WIS monograph now in the early stages of preparation will report.

For perceptions of jobs and roles the JDS is again, with its many scales, a good candidate, and the MOAO bears consideration. In the leadership domain, the JDS figures again. And in the occupational mental health area, the House and Rizzo (1972) measure of stress bears further study.

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